

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-7 (Cancelled)

Claim 8 (Currently amended): A ~~vaccine comprising a vaccine vector wherein the vaccine vector comprises a~~ comprising an isolated nucleic acid molecule which encodes a ~~polypeptide selected from any one of:~~

- (a) SEQ ID No: 2;
- (b) SEQ ID No. 4; or
- (c) SEQ ID No. 6;
- (d) ~~an immunogenic fragment comprising at least 12 consecutive amino acids from the polypeptide of (a); and~~
- (e) ~~a polypeptide of any one of (a) to (d) which has been modified by conservative amino acid substitution without loss of immunogenicity, wherein said modified polypeptide is at least 75% identical in amino acid sequence to the corresponding polypeptide of any one of (a) to (d);~~

wherein the nucleic acid molecule is ~~either operatively linked to one or more control sequences a promoter~~ for expression of the polypeptide in a mammalian cell, or is integrated and expressed in a bacterial cell suitable for use as a vaccine vector; and

wherein the vaccine optionally comprises an additional nucleic acid encoding an additional polypeptide which enhances the immune response to the polypeptide selected from any one of (a) to ~~(d)~~ (c) above.

Claim 9 (Previously presented): The vaccine of claim 8 wherein the additional polypeptide is a *Chlamydia* polypeptide.

Claim 10 (Currently amended): A pharmaceutical composition comprising a pharmaceutically acceptable carrier or diluent suitable for use in a vaccine and a nucleic acid molecule ~~which encodes a polypeptide selected from any one of~~ comprising a nucleic acid sequence which encodes:

- (a) SEQ ID No: 2;
- (b) SEQ ID No. 4; or
- (c) SEQ ID No. 6;

~~(d) — an immunogenic fragment comprising at least 12 consecutive amino acids from the polypeptide of (a); and~~

~~(e) — a polypeptide of any one of (a) to (d) which has been modified by conservative amino acid substitution without loss of immunogenicity; wherein said modified polypeptide is at least 75% identical in amino acid sequence to the corresponding polypeptide of any one of (a) to (d);~~

wherein the nucleic acid molecule is operatively linked to ~~one or more control sequences~~ a promoter for expression of the polypeptide in a mammalian cell.

Claim 11 (Currently amended): ~~The vaccine according to claim 8 further comprising~~
A vaccine comprising the vaccine vector of claim 8 and a pharmaceutically acceptable carrier.

Claims 12-25 (Cancelled)

26. (Currently amended) A method for preventing or treating Chlamydia infection comprising the step of administering an effective amount of a nucleic acid molecule which encodes ~~a polypeptide selected from any one of:~~

(a) SEQ ID No: 2;

(b) SEQ ID No. 4; or

(c) SEQ ID No. 6;

~~(d) — an immunogenic fragment comprising at least 12 consecutive amino acids from the polypeptide of (a); and~~

~~(e) — a polypeptide of any one of (a) to (d) which has been modified by conservative amino acid substitution without loss of immunogenicity, wherein said modified polypeptide is at least 75% identical in amino acid sequence to the corresponding polypeptide of any one of (a) to (d);~~

wherein the nucleic acid molecule is operatively linked to ~~one or more control sequences~~ a promoter for expression of the polypeptide in a mammalian cell.

27. (Currently amended) A method for preventing or treating Chlamydia infection comprising the step of administering an effective amount of the vaccine vector of claim 8.

28. (Previously presented) A method for preventing or treating *Chlamydia* infection comprising the step of administering an effective amount of the pharmaceutical composition of claim 10.

Claims 29-34 (Cancelled)

35. (Currently amended) ~~The nucleic acid molecule according to claim 7 which is an expression plasmid selected from the group consisting of~~ The vaccine vector of claim 8 which is expression plasmid pCACPNM555a, pCAI555 and or pCAD76kDa.

Claims 36-38 (Cancelled)

Claim 39 (New): The vaccine vector of claim 8 wherein the promoter is cytomegalovirus promoter (CMV).

Claim 40 (New): The vaccine vector of claim 9 wherein the promoter is cytomegalovirus promoter (CMV).

Claim 41 (New): The composition of claim 10 wherein the promoter is cytomegalovirus promoter (CMV).

Claim 42 (New): The vaccine of claim 11 wherein the promoter is cytomegalovirus promoter (CMV).

Claim 43 (New): The method of claim 26 wherein the promoter is cytomegalovirus promoter (CMV).

Claim 44 (New): The method of claim 27 wherein the promoter is cytomegalovirus promoter (CMV).

Claim 45 (New): The method of claim 28 wherein the promoter is cytomegalovirus promoter (CMV).